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Four New Spiders from Kansas.

By THEO. H. SCHEFFER, A. M.

(Plate XVII.)

The four new species of spiders herein considered were first described in "A Preliminary List of Kansas Spiders," published by a local journal of the Kansas State Agricultural College, April 2, 1904. It has seemed desirable to give the descriptions more general publication, especially since a few errors crept into the original article. Types of the species form part of the collection of the Kansas State Agricultural College, and duplicates have been sent to the National Museum at Washington.

Family THOMISIDÆ.

Xysticus modestus sp. nov. (Fig. 1.)

This is a modest little crab spider, smaller than any of the species ordinarily considered as common.

Female.—Length 4.5 mm.; width of cephalothorax 2 mm.; width of abdomen 3 mm. First and second pairs of legs stout, the tibiæ and metatarsi armed with two rows of spines set along the anterior margin. The corresponding joints in the legs of the third and fourth pairs show a few weak spines on the under surface.

The middle area of the cephalothorax is yellow, brightest near the base. In the central longitudinal line is a narrowing streak of brown running back from a point between the posterior median eyes. On either side of this streak is a broader stripe of brown, ending a short distance in front of the posterior margin, in an enlarged portion curved slightly outward. Still farther out, conforming to the outward curve of the cephalothorax, is a broad stripe of brown bordered laterally by a narrow line of yellow. On the extreme lateral margin is a hair-line of brown.

The ground color of the abdomen is dark brown. There is a narrow central stripe of dirty yellow and three broad transverse bands of about the same color. The portion of the dorsal region not occupied by these bands is punctate with yellow. The legs are yellowish brown, the former color predominating in the proximal joints, the latter on the tibiae, metatarsi and tarsi. The third and fourth pairs of legs are lighter in general than the first and second pairs. Scattered over the abdomen and also on the front of the head and on the pedipalps are numerous stubby hairs, some of them enlarged at the ends so as to be almost clavate.

This spider is a pronounced type, but not common. Several females were taken under stones near Manhattan in June. In this situation they were guarding their egg sacks.

Family SALTICIDÆ.

Phidippus ferrugineus sp. nov. (Figs. 2, 3.)

This is a large species with two dominant colors—black and reddish brown.

Female.—Length 14-15 mm. Length of abdomen 10 mm.; width of abdomen 7 mm.; height of abdomen 6 mm. Width of cephalothorax 4 mm.; height of cephalothorax 4 mm.

Legs.—Relative length 4, 1, 2, 3. Absolute length 9.5, 9, 8.5, 10.5 mm., respectively.

Colors.—The abdomen is black beneath and on the sides, with sometimes faint indications of lighter spots or streaks. Above it is reddish brown, except in the central longitudinal region, which is occupied by a black stripe extending from the anterior pair of muscle depressions to the spinnerets. This stripe broadens just back of the posterior muscle depressions until it is nearly 3 mm. in width, when it narrows again gradually toward the tip of the abdomen. In some specimens the red projects into the stripe so as to form two pairs of spots. Often these spots are entirely isolated from the red of the dorsum. Occasionally a spider has scarcely any indication of the stripe, being of a uniform reddish brown color above. Usually a lighter red or yellowish streak extends along the front border of the abdomen and runs diagonally down the sides. Back of the diagonal portion of this stripe may be one or two more yellowish stripes running down from the red-brown of the dorsum.

The cephalothorax is black beneath, on the sides, and on that portion of the dorsal aspect that slopes toward the abdomen. The higher portion is reddish brown above, like the abdomen. The chelicerae are iridescent green and purplish. The pedipalps and the first two pairs of legs have yellowish scales scattered here and there, and rings of like color near some of the joints. The presence of some long whitish hairs on these appendages is also common. The second and third pairs of legs are almost always uniformly black, though some specimens have the proximal half of the tarsus lighter.

This spider spends the winter under loose stones in large oval dwelling-sacks of closely woven silk, protected in some cases by the addition of leaves or trash. I have found the species only in the vicinity of Manhattan, on the summits or higher slopes of hills capped with the Permian limestone. I have not been able to identify the male.

Family ARGIOPIDÆ.

Araneus singæformis sp. nov. (Figs. 4, 5, 6.)

This small orbweaver is of the type usually referred to the genus *Singa*, a group whose species Simon includes in the genus *Araneus*.

Female.—Length 4-5 mm. The abdomen is oval, moderately high, and symmetrical in outline. It projects some distance over the cephalothorax. The latter is broad back of the head region, which is much narrower and distinctly set off by lateral grooves. The head itself is considerably elevated. The median ocular area is nearly or quite square. The lateral eyes are contiguous. The legs are short and show very few spines.

Coloration.—The cephalothorax, legs and chelicerae are various shades of dull yellow. The head is usually brightest and the thoracic region darkest, in some cases tinged with brown. The legs are unmarked, except in an occasional specimen which shows traces of longitudinal stripes, particularly on the femora. The ocular quadrangle, as well as a small area about the lateral eyes, is black. The abdomen above and on the sides is whitish, tinged with a fine network of brown. The muscle depressions are marked by brownish spots, and down the center of the abdomen in most specimens is a more or less branched scar-like stripe. A broad border of black nearly or quite encircles the dorsum near the margin. Sometimes it is interrupted at the anterior end and occasionally also at the posterior end. The central portion of the abdomen beneath is occupied by a broad black band running back from the epigynum and enclosing the spinnerets. On either side of this is a narrow stripe of

white, and between this stripe and the margin another band of black. The sternum is also black. These black areas, above and below, are more or less dotted over with light spots.

I have taken but one specimen of this spider in sweeping, but secured over a hundred mature females from the provision stores of mud-dauber wasps in Wallace County, July 16th.

Family LYCOSIDÆ.

Lycosa wacondana sp. nov. (Fig. 7.)

A small species, found about springs or creeks on the prairies.

Female.—Length 7-8 mm. ; width of cephalothorax 3 mm. The abdomen is slightly longer than the cephalothorax, which is narrow in front and widens rapidly back of the head, the thoracic region proper being as broad as it is long. The posterior margin of the cephalothorax is very noticeably procurved above the peduncle.

The legs are rather long and slender. The fourth pair is longest, measuring about 13 mm. The front pair measures 10 mm. They are sparsely covered with dark hairs and beset with black spines.

The ground color of the legs is dull yellow, but they are darker toward the ends, and some of the joints, particularly the femora, are banded near the middle and at their extremities by the darker shade. The coxæ are lighter above and below than the general ground color of the legs. At the proximal end of the trochanters, anteriorly, is a slight roughened prominence or two much darker in color. The brownish cephalothorax presents a dull yellow middle stripe, widest back of the eyes, and two somewhat undulating lateral stripes of the same color. The dorsal groove is marked by a fine dark line. From its anterior end a forked stripe of brown runs forward to the eyes. In the brown area between the central and lateral stripes of the cephalothorax are several darker streaks arranged radially from the dorsal groove. The ground color of the abdomen is a darker brown than that of the cephalothorax. It is finely punctate with dull yellow. On the front half is a pointed yellow stripe running back to the region of the muscle depressions, and there are faint indications of transverse streaks on the hinder half. The sternum is light in the middle and darker around the edges. The under side of the abdomen is similarly colored, except that in the central line of the lighter area is a darker streak running from the epigynum to the spinnerets.

I do not know the male of this species. Have taken the female in June about Manhattan, and in August at Waconda Springs. On the latter occasion nearly all the females were carrying cocoons of eggs.